Chapter 6

Cigarette Smokers

Rational Actors or Rational Fools?

Paul Slovic

I don't smoke and don't care to be around smoke, but I believe smokers should have the right to smoke if they choose. What I cannot comprehend, however, is why smokers are being allowed to sue tobacco companies for millions of dollars because of choices they made on their own.

No one forces anyone to smoke. We have been warned ever since I can remember about the dangers of smoking. If I choose to smoke, then I also must pay the consequences of whatever that choice leads to, whether it's lung cancer or a home that burns because I fell asleep in bed with a cigarette in my hand.

This whole thing is totally unfair to the tobacco industry. But maybe I can learn something from it. Maybe I'll start smoking so I can die rich some day and leave all my millions to my kids and grandkids.[1]

In numerous legal battles across the United States, lawyers for the cigarette industry have been relying heavily on the argument that smokers know the health risks of smoking and are making rational decisions to smoke because the benefits

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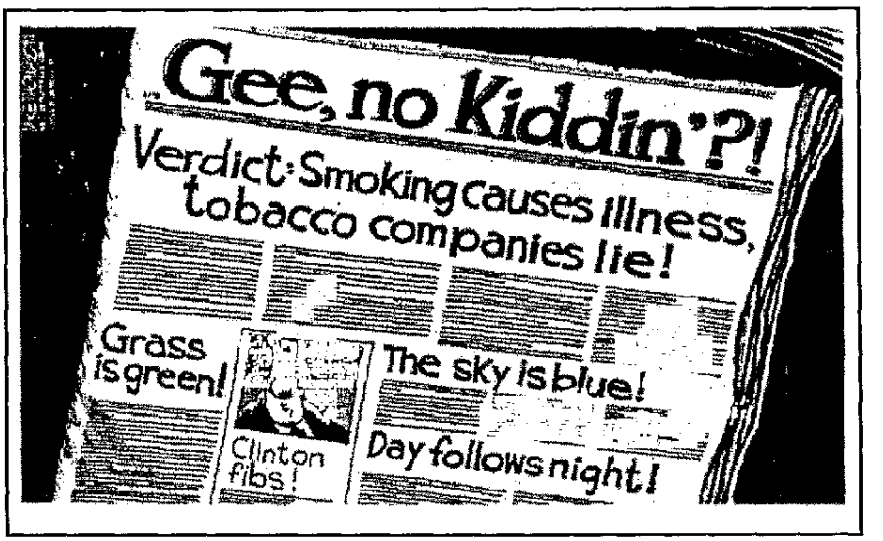

Figure 6.1. Things everybody knows.
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to them outweigh the risks. Such "informed consumers," the lawyers claim, have no cause for complaint if they become ill.

Do individuals really know and understand the risks entailed by their smoking decisions? This question is particularly important in the case of young persons, because most smokers start during childhood and adolescence. After many years of intense publicity about the hazards of smoking cigarettes, it is generally believed that every teenager and adult in the United States knows that smoking is hazardous to one's health. Apart from writers of letters to newspaper editors and editorial cartoonists (see Figure 6.1), the most enthusiastic empirical demonstration of this "fact" comes from research on perceptions of risk from smoking reported by Viscusi (1992b; see also Viscusi, 1990, 1991a).

Analyzing survey data, Viscusi concluded that young smokers are not only informed about the risks of smoking, they are overinformed in the sense that they overestimate those risks. He also concluded that, despite this overestimation, young people operate rationally on the information they have. In this chapter, I present a counterview based upon work in cognitive psychology that demonstrates the powerful influence of experiential thinking and affect on judgment and decision making. I describe some of this work in the next section. In the final section of the chapter, I examine data from the Annenberg Survey 2 that demonstrate how experiential thinking misleads smokers and, contrary to Viscusi's view, causes them to underestimate the risks of smoking.

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Experiential Thinking and the Affect Heuristic

This section introduces a theoretical framework that describes the importance of affect in guiding judgments and decisions. As used here, *affect* means the specific quality of "goodness" or "badness" (a) experienced as a feeling state (with or without conscious awareness) and (b) demarcating a positive or negative quality of a stimulus. Affective responses occur rapidly and automatically—note how quickly you sense the feelings associated with the word *treasure* or the word *hate*. Following Finucane, Alhakami, Slovic, and Johnson (2000), I shall argue that reliance on such feelings can be characterized as the "affect heuristic." Below, I briefly trace the development of the affect heuristic across a variety of research paths. A more extensive review can be found in Slovic, Finucane, Peters, and MacGregor (in press).

Background

A strong early proponent of the importance of affect in decision making was Zajonc (1980), who argued that affective reactions to stimuli are often the very first reactions, occurring automatically and subsequently guiding information processing and judgment. According to Zajonc, all perceptions contain some affect. "We do not just see 'a house': We see a *handsome* house, an *ugly* house, or a *pretentious* house" (p. 154). He later adds: "We sometimes delude ourselves that we proceed in a rational manner and weigh all the pros and cons of the various alternatives. But this is probably seldom the actual case. Quite often, 'I decided in favor of X' is no more than 'I liked X.' . . . We buy the cars we 'like,' choose the jobs and houses we find 'attractive,' and then justify these choices by various reasons" (p. 155).

Affect also plays a central role in what have come to be known as "dual-process theories" of thinking, knowing, and information processing. As Epstein (1994) observes, "There is no dearth of evidence in everyday life that people apprehend reality in two fundamentally different ways, one variously labeled intuitive, automatic, natural, non-verbal, narrative, and experiential, and the other analytical, deliberative, verbal, and rational" (p. 710). Table 6.1 further compares these two systems. One of the characteristics of the experiential system is its affective basis. Although analysis is certainly important in many decision-making circumstances, reliance on affect and emotion is a quicker, easier, and more efficient way to navigate in a complex, uncertain, and sometimes dangerous world. Many theo-

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TABLE 6.1 Two Modes of Thinking: Comparison of the Experiential and Rational Systems

Experiential System	*Rational System*
1. Holistic	1. Analytic
2. Affective: pleasure/pain oriented	2. Logical: reason oriented (what is sensible)
3. Associationist connections	3. Logical connections
4. Behavior mediated by "vibes" from past experiences	4. Behavior mediated by conscious appraisal of events
5. Encodes reality in concrete images, metaphors, and narratives	5. Encodes reality in abstract symbols, words, and numbers
6. More rapid processing: oriented toward immediate action	6. Slower processing: oriented toward delayed action
7. Self-evidently valid: "Experiencing is believing"	7. Requires justification via logic and evidence

SOURCE: Adapted from Epstein (1994).

rists have given affect a direct and primary role in motivating behavior. Epstein's view on this is as follows:

> The experiential system is assumed to be intimately associated with the experience of affect, . . . which refer[s] to subtle feelings of which people are often unaware. When a person responds to an emotionally significant event . . . the experiential system automatically searches its memory banks for related events, including their emotional accompaniments. . . . If the activated feelings are pleasant, they motivate actions and thoughts anticipated to reproduce the feelings. If the feelings are unpleasant, they motivate actions and thoughts anticipated to avoid the feelings. (p. 716)

Also emphasizing the motivational role of affect, Mowrer (1960a) conceptualized conditioned emotional responses to images as prospective gains and losses that directly "guide and control performance in a generally sensible adaptive manner" (p. 30; see also Mowrer, 1960b). Mowrer criticized theorists who postulate purely cognitive variables such as expectancies (probabilities) intervening between stimulus and response, cautioning that we must be careful not to leave the organism at the choice point "lost in thought." Mowrer's solution was to view expectancies more dynamically (as conditioned emotions such as hopes and fears) serving as motivating states leading to action.

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One of the most comprehensive and dramatic theoretical accounts of the role of affect in decision making is presented by the neurologist Antonio Damasio in his book *Descartes' Error: Emotion, Reason, and the Human Brain* (1994). Damasio's theory is derived from observations of patients with damage to the ventromedial frontal cortices of the brain that has left their basic intelligence, memory, and capacity for logical thought intact but has impaired their ability to "feel"—that is, to associate affective feelings and emotions with the anticipated consequences of their actions. Close observation of these patients combined with a number of experimental studies led Damasio to argue that this type of brain damage induces a form of sociopathy (Damasio, Tranel, & Damasio, 1990) that destroys the individual's ability to make rational decisions—that is, decisions that are in his or her best interest. Persons suffering such damage became socially dysfunctional even though they remain intellectually capable of analytic reasoning. Commenting on one particularly significant case, Damasio (1994) observes:

> The instruments usually considered necessary and sufficient for rational behavior were intact in him. He had the requisite knowledge, attention, and memory; his language was flawless; he could perform calculations; he could tackle the logic of an abstract problem. There was only one significant accompaniment to his decision-making failure: a marked alteration of the ability to experience feelings. Flawed reason and impaired feelings stood out together as the consequences of a specific brain lesion, and this correlation suggested to me that feeling was an integral component of the machinery of reason. (p. xii)

In seeking to determine "what in the brain allows humans to behave rationally," Damasio argues that thought is made largely from images, broadly construed to include sounds, smells, real or imagined visual impressions, ideas, and words. A lifetime of learning leads these images to become "marked" by positive and negative feelings linked directly or indirectly to somatic or bodily states (Mowrer and other learning theorists would call this *conditioning*): "In short, *somatic markers are . . . feelings generated from secondary emotions.* These emotions and feelings *have been connected, by learning, to predicted future outcomes of certain scenarios*" (Damasio, 1994, p. 174). When a negative somatic marker is linked to an image of a future outcome, it sounds an alarm. When a positive marker is associated with the outcome image, it becomes a beacon of incentive. Damasio concludes that somatic markers increase the accuracy and efficiency of the decision process, and their absence degrades performance by "compromising the rationality that makes us distinctly human and allows us to decide in consonance with a sense of personal future, social convention, and moral principle" (p. xii).

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Based on ideas about affect marking images (e.g., Damasio, 1994), which in turn motivates behavior (e.g., Epstein, 1994; Mowrer, 1960a, 1960b), affect can be portrayed as an essential component in many forms of judgment and decision making. Specifically, Finucane et al. (2000) propose that people use an *affect heuristic* to make judgments. That is, representations of objects and events in people's minds are tagged to varying degrees with affect. In the process of making a judgment or decision, an individual consults or refers to an "affect pool" containing all the positive and negative tags consciously or unconsciously associated with the representations. Just as imaginability, memorability, and similarity serve as cues for probability judgments (e.g., the availability and representativeness heuristics first described by Tversky & Kahneman, 1974), affect may serve as a cue for many important judgments. Relying on an affective impression can be far easier—more efficient—than weighing the pros and cons or retrieving from memory many relevant examples, especially when the required judgment or decision is complex or mental resources are limited. This characterization of a mental shortcut leads to the labeling of the use of affect as a *heuristic*.

Empirical Evidence

This subsection presents and integrates the findings of a series of diverse studies demonstrating the operation of the affect heuristic.

Manipulating Preferences Through Controlled Exposures

The fundamental nature and importance of affect have been demonstrated repeatedly in a remarkable series of studies by Robert Zajonc and his colleagues (see, e.g., Zajonc, 1968). The concept of stimulus exposure is central to all of these studies. The central finding is that, when objects are presented to an individual repeatedly, the "mere exposure" is capable of creating a positive attitude or preference for these objects.

In a typical study, stimuli such as nonsense phrases, faces, or Chinese ideograms are presented to an individual with varying frequency. In a later session, the individual judges these stimuli on liking, familiarity, or both. The more frequent the exposure to a stimulus, the more positive the response. A meta-analysis by Bornstein (1989) of mere exposure research published between 1968 and 1987 included more than 200 experiments examining the exposure-affect relationship. Unreinforced exposures were found reliably to enhance affect toward visual, auditory, gustatory, abstract, and social stimuli.

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Winkielman, Zajonc, and Schwarz (1997) have demonstrated the speed with which affect can influence judgments in studies employing a subliminal priming paradigm. A participant was "primed" through exposure to a smiling face, a frowning face, or a neutral polygon presented for 1/250 of a second, an interval so brief that there is no recognition or recall of the stimulus. Immediately following this exposure, an ideogram was presented for two seconds, following which the participant rated the ideogram on a scale of liking. Mean liking ratings were significantly higher for ideograms preceded by smiling faces. This effect was lasting. In a second session, ideograms were primed by the "other face," the one not associated with the stimulus in the first session. This second priming was ineffective because the effect of the first priming remained.

Sherman, Kim, and Zajonc (1999) tested the perseverance of induced preferences by asking participants to study Chinese characters and their English meanings. Half of the meanings were positive (e.g., beauty) and half were negative (e.g., disease). Participants were then given a test of these meanings followed by a task in which they were given pairs of characters and were asked to choose the one they preferred. Participants preferred characters with positive meaning 70% of the time. Next, the characters were presented with neutral meanings (desk, linen) and subjects were told that these were the "true" meanings. The testing procedure was repeated and, despite the participants' having learned the new meanings, preferences remained the same. Characters that had been initially paired with positive meanings still tended to be preferred.

These and many other related studies demonstrate that affect is a strong conditioner of preference, whether or not the cause of that affect is consciously perceived. They also demonstrate that affect is independent of cognition, indicating that there may be conditions of affective or emotional arousal that do not necessarily require cognitive appraisal. This affective mode of response, unburdened by cognition and hence much faster, has considerable adaptive value in many situations.

Image, Affect, and Decision Making

Consistent with the literature just reviewed, a number of nonlaboratory studies have also demonstrated strong relationships among imagery, affect, and decision making. Many of these studies have used a word-association technique to discover the affective connections that individuals have learned through life experiences. Researchers using this method present each subject with a target stimulus, usually a word or very brief phrase, and ask him or her to provide the first thought or image that comes to mind. The process is then repeated a number of times, say three to six, or until no further associations are generated. Following the elicita-

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TABLE 6.2 Images, Ratings, and Summation Scores for One Respondent

Stimulus	*Image Number*	*Image*	*Image Rating*
San Diego	1	Very nice	2
San Diego	2	Good beaches	2
San Diego	3	Zoo	2
San Diego	4	Busy freeway	1
San Diego	5	Easy to find way	1
San Diego	6	Pretty town	2
Total			10
Denver	1	High	2
Denver	2	Crowded	0
Denver	3	Cool	2
Denver	4	Pretty	1
Denver	5	Busy airport	-2
Denver	6	Busy streets	-2
Total			1

SOURCE: Slovic et al. (1991).
NOTE: Based on these summation scores, this person's predicted preference for a vacation site would be San Diego.

tion of images, the subject is asked to rate each image he or she has given on a scale ranging from very positive (e.g., +2) to very negative (e.g., –2), with a neutral point in the center. Scoring consists of summing or averaging the ratings to obtain an overall index.

This method has been used successfully to measure the affective meanings that influence people's preferences for different cities and states (Slovic et al., 1991) as well as their support for or opposition to technologies such as nuclear power (Peters & Slovic, 1996). Table 6.2 illustrates the method in a task where one respondent was asked to give associations for each of two cities and, later, to rate each image affectively. The cities in this example show the clear affective superiority of San Diego over Denver for this subject. Slovic et al. (1991) showed that summed image scores such as these were highly predictive of expressed preferences for living in or visiting cities. In one study, we found that the image score predicted the location of *actual* vacations during the next 18 months.

Subsequent studies have found affect-laden imagery elicited by word associations to be predictive of preferences for investing in new companies on the stock

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market (MacGregor, Slovic, Dreman, & Berry, 2000) and of adolescents' decisions to take part in health-threatening and health-enhancing behaviors such as smoking and exercise (Benthin et al., 1995).

The Affect Heuristic in Judgments of Risk and Benefit

The research that, in conjunction with the sorts of findings reported above, led to recognition of the affect heuristic, had its origins in the early study of risk perception reported by Fischhoff, Slovic, Lichtenstein, Read, and Coombs (1978). One of the findings in that study and subsequent replications of it was that perception of risk and society's responses to risk were strongly linked to the degree to which a hazard evoked feelings of dread (see also Slovic, 1987). Thus activities associated with cancer (e.g., activities exposing people to radiation or toxic chemicals) are seen as riskier and more in need of regulation than activities associated with less dreaded forms of illness, injury, and death (e.g., accidents).

A second finding in the study by Fischhoff et al. (1978) has been even more instrumental in the study of the affect heuristic. This is the finding that judgments of risk and benefit are negatively correlated. For many hazards, the greater the perceived benefit, the lower the perceived risk, and vice versa. Smoking, use of alcoholic beverages, and consumption of food additives, for example, tend to be seen as very high in risk and relatively low in benefit, whereas the use of vaccines, antibiotics, and X rays tend to be seen as high in benefit and relatively low in risk. This negative relationship is noteworthy because it occurs even when the nature of the gains or benefits from an activity is distinct and qualitatively different from the nature of the risks. That the inverse relationship is generated in people's minds is suggested by the fact that risk and benefits generally tend to be positively (if at all) correlated in the world. Activities that bring great benefits may be high or low in risk, but activities that are low in benefit are unlikely to be high in risk (if they were, they would be proscribed).[2]

A study by Alhakami and Slovic (1994) found that the inverse relationship between the perceived risk and perceived benefit of an activity (e.g., using pesticides) was linked to the strength of positive or negative affect associated with that activity. This result implies that people base their judgments of an activity or a technology not only on what they *think* about it but also on what they *feel* about it. If they like an activity, they are moved to judge the risks as low and the benefits as high; if they dislike it, they tend to judge the opposite—high risk and low benefit.

These findings suggest that use of the affect heuristic guides perceptions of risk and benefit as depicted in Figure 6.2. If so, providing information about risk

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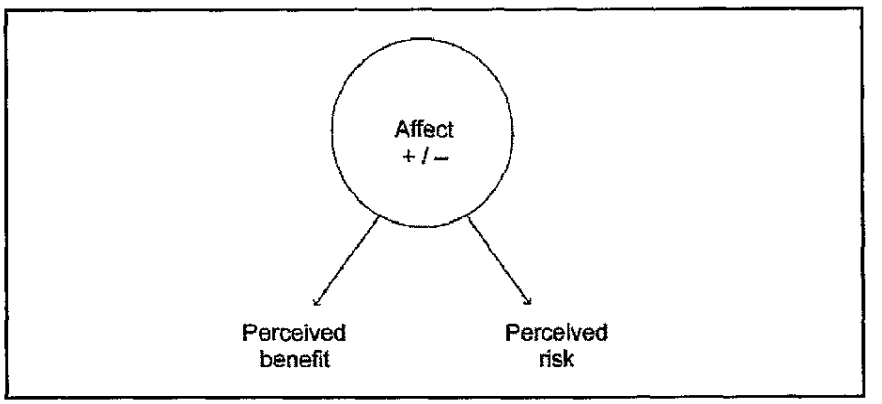

Figure 6.2. A model of the affect heuristic explaining the risk/benefit confounding observed by Alhakami and Slovic (1994). Judgments of risk and benefit are assumed to be derived by reference to an overall affective evaluation of the stimulus item.
SOURCE: "The Affect Heuristic in Judgments of Risks and Benefits," M. L. Finucane, A. Alhakami, P. Slovic, and S. M. Johnson. 2000. © John Wiley & Sons Limited. Reproduced with permission.

should change the perception of benefit and vice versa (see Figure 6.3). For example, information stating that benefit is high for some technology should lead to more positive overall affect, which would, in turn, decrease perceived risk. Indeed, Finucane et al. (2000) conducted this experiment, providing four different kinds of information designed to manipulate affect by increasing or decreasing perceived risk and increasing or decreasing perceived benefit. In each case there was no apparent logical relation between the information provided (e.g., information about risks) and the nonmanipulated variable (e.g., benefits). The predictions were confirmed. When the information that was provided changed either the perceived risk or the perceived benefit, an affectively congruent but inverse effect was observed on the nonmanipulated attribute, as depicted in Figure 6.3. These findings support the theory that risk and benefit judgments are causally determined, at least in part, by the overall affective evaluation.

The affect heuristic also predicts that using time pressure to reduce the opportunity for analytic deliberation (and thereby allowing affective considerations freer rein) should enhance the inverse relationship between perceived benefits and risks. In a second study, Finucane et al. (2000) showed that the inverse relationship between perceived risks and benefits increased under time pressure, as predicted. These two experiments with judgments of benefits and risks are important because they support Zajonc's (1980) contention that affect influences judgment directly and is not simply a response to a prior analytic evaluation.

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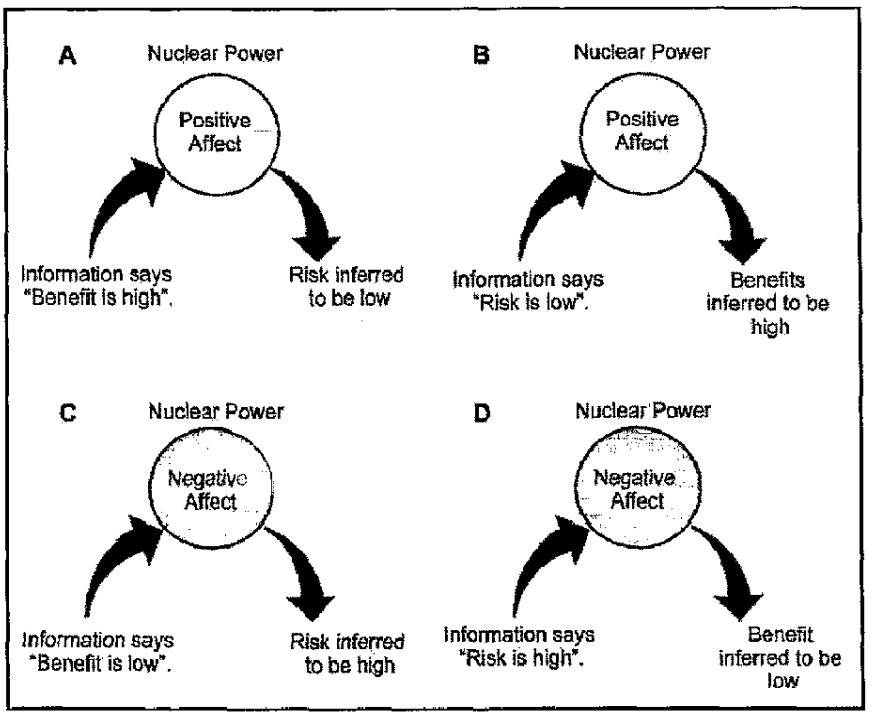

Figure 6.3. Model showing how information about benefit (A) or information about risk (B) could increase the overall affective evaluation of nuclear power and lead to inferences about risk and benefit that coincide affectively with the information given. Similarly, information could decrease the overall affective evaluation of nuclear power as in C and D, resulting in inferences that are opposite those in A and B.
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∞ Is the Decision to Smoke Informed and Rational?

Viscusi's Account and Its Shortcomings

In his book titled *Smoking: Making the Risky Decision,* Viscusi (1992b) addresses the following question: "At the time when individuals initiate their smoking activity, do they understand the consequences of their actions and make rational decisions?" (p. 11). He goes on to define the appropriate test of rationality in terms of "whether individuals are incorporating the available information about smoking

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risks and are making sound decisions, given their own preferences" (p. 12). Viscusi even questions whether an individual's future self may have different preferences, although he never offers information on any test of this possibility: "Does the 20-year-old smoker fully recognize how his or her future self will value health as compared with smoking?" (p. 119).

The primary data upon which Viscusi (1992b) relies come from a national survey of more than 3,000 persons ages 16 and older in which respondents were asked, "Among 100 cigarette smokers, how many do you think will get lung cancer because they smoke?" Analyzing responses to this question, Viscusi found that people greatly overestimated the risks of a smoker getting lung cancer.[3] They also overestimated overall mortality rates from smoking and loss of life expectancy from smoking. Moreover, young people (ages 16-21) overestimated these risks to an even greater extent than did older people. Viscusi also found that perceptions of risk from smoking were predictive of whether and how much people smoked, for young and old alike.

Viscusi (1992b) argues that these data support a rational learning model in which consumers respond appropriately to information and make reasonable trade-offs between the risks and benefits of smoking. With respect to youth, he concludes that his findings "strongly contradict the models of individuals being lured into smoking at an early age without any cognizance of the risks" (p. 143). Viscusi further concludes that young people are so well-informed that there is no justification for informational campaigns designed to boost their awareness. Finally, he observes that social policies that allow smoking at age 18 "run little risk of exposing uninformed decision makers to the potential hazards of smoking" (p. 149). Viscusi's data and conclusions thus appear to lend support to the defense used by cigarette companies to fend off lawsuits brought by diseased smokers: These people knew the risks and made informed, rational choices to smoke.[4]

Viscusi's arguments would seem, at first glance, to have merit from the standpoint of experiential thinking as well as from his analytic perspective. On experiential grounds, the well-known association of cigarettes with cancer, a dread disease, should create enough negative affect to stimulate a powerful drive to avoid this harmful behavior. Consistent with this view, many people do decide not to smoke or to quit smoking. The minority who initiate smoking or maintain the habit may also be doing so on the basis of informed experiential or analytic thinking that has led them to conclude that the benefits outweigh the risks.

On the other hand, there appear to be a number of ways in which reliance on experiential thinking might lead smokers to fail to appreciate risks and to act in ways that are not in their best interests. In particular, the exposure to information that Viscusi believes causes overestimation of risk cuts both ways. The major exposure comes from massive advertising campaigns designed to associate positive imagery and positive affect with cigarette smoking. A recent ad for Kool Natural

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Lights, for example, featured a picture of a beautiful waterfall on the cigarette package. In addition, the word *natural* appeared 13 times in the ad.

More subtle than the content of cigarette ads is the possibility that the "mere exposure effect" that results from viewing them repeatedly (Bornstein, 1989; Zajonc, 1968) also contributes to positive affect for smoking in general and for specific brands of cigarettes in particular. Through the workings of the affect heuristic, this positive affect would be expected not only to enhance individuals' attraction to smoking but to depress the perception of risk (Finucane et al., 2000).

Within the experiential mode of thinking, "seeing is believing," and young people in particular are likely to see little or no visible harm from the smoking done by their friends or themselves. In this sense, smoking risks are not "available" (Tversky & Kahneman, 1973).

Viscusi's arguments are also lacking in a number of other respects, as I have indicated in several previous studies (Slovic, 1998, 2000a, 2000b). Here I shall focus on two failings, both of which relate to experiential thinking. The first reflects the repetitive nature of cigarette smoking and the accumulation of risk over a long period of time. The second reflects young people's failure to appreciate the risks of becoming addicted to smoking.

Cigarette smoking is a behavior that takes place one cigarette at a time. A person smoking one pack of cigarettes every day for 40 years "lights up" about 300,000 times. Although most smokers acknowledge a high degree of risk associated with many years of smoking, many believe they can get away with some lesser amount of smoking before the risk takes hold. Many young smokers, in particular, believe that smoking for only a few years poses negligible risk. They are more prone to believe in the safety of short-term smoking than are young nonsmokers (Slovic, 1998, 2000a).

Belief in the near-term safety of smoking combines in an insidious way with a tendency for young smokers to be uninformed about, or to underestimate, the difficulty of stopping smoking. Recent research indicates that adolescents begin to show evidence of nicotine dependence within days to weeks of the onset of occasional use of tobacco (DiFranza et al., 2000). Many young people regret their decision to start smoking and attempt unsuccessfully to stop. The 1989 Teenage Attitudes and Practices Survey found that 74% of adolescent smokers reported they had seriously thought about quitting, and 49% had tried to quit in the previous 6 months (Allen, Moss, Giovino, Shopland, & Pierce, 1993). A longitudinal survey conducted as part of the University of Michigan's Monitoring the Future Study found that 85% of high school seniors who smoked occasionally predicted that they probably or definitely would not be smoking in 5 years, as did 32% of those who smoked one pack of cigarettes per day. However, in a follow-up study conducted 5-6 years later, of those who had smoked at least one pack per day as seniors, only 13% had quit and 69% still smoked one pack or more per day. Of those

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who smoked one to five cigarettes per day as seniors, only 30% had quit (60% had expected to do so) and 44% had actually increased their cigarette consumption (Centers for Disease Control and Prevention, 1994a; Johnston, O'Malley, & Bachman, 1993).

The belief pattern that emerges from these and various other studies is one in which many young smokers perceive themselves to be at little or no risk from each cigarette smoked because they expect to stop smoking before any damage to their health occurs. In reality, a high percentage of young smokers continue to smoke over a long period of time and are certainly placed at risk by their habit.

New Data: The Dominance of Experiential Thinking

Viscusi's arguments about perceptions of risk and the informed choices made by smokers assume the preeminence of the analytic mode of thinking. Viscusi (1992b) portrays the beginning smoker as a young economist, weighing the benefits against the risks before making the fateful decision to light up: "One might expect some individuals to rationally choose to smoke if the weight they placed on the benefits derived from smoking exceeds their assessment of the expected losses stemming from risks" (p. 135). But the evidence for smokers' short-term perspectives and underestimation of the grip of addiction suggests that experiential and affective forces are leading many young people to make smoking decisions that they later regard as mistakes.

Evidence for this view comes from data collected in a national telephone survey of more than 3,500 individuals conducted on behalf of the Annenberg Public Policy Center of the University of Pennsylvania in the fall of 1999 and winter of 1999-2000. Households were selected through random-digit dialing, and within each household a resident aged 14 or older was selected randomly for the interview. Young people were oversampled. Completed interviews were obtained for 2,002 members of a "youth sample" ages 14 to 22 and 1,504 members of an adult sample ranging in age from 23 to 95. Within the youth sample there were 478 smokers and 1,524 nonsmokers; among the adults there were 310 smokers and 1,194 nonsmokers.[5]

Recall that the experiential mode is automatic, based on feelings, and not always accessible to conscious awareness. People acting experientially may not sense that they are consciously deliberating. Experiential thinking is evident throughout responses to the survey questions (see Table 6.3). Almost 80% of the adult smokers surveyed answered "not at all" when asked how much they thought about how smoking might affect their health when they first began to smoke (Question 19a). Young smokers appeared more likely to have thought

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TABLE 6.3 Perceptions and Expectations of the Beginning Smoker (in percentages)

Questions/Responses	*Adult Smokers (N = 310)*	*Young Smokers (N = 478)*
Q19A. When you first started to smoke, how much did you think about how smoking might affect your health?		
A lot	5.8	13.8
A little	15.5	38.9
Not at all	78.4	46.9
Don't know/refused	0.3	0.4
Q19C. How much do you think about the health effects of smoking now?		
A lot	53.9	54.6
A little	32.9	36.0
Not at all	12.3	8.6
Don't know/refused	1.0	0.8
Q19D. Since you started smoking, have you heard of any health risks of smoking that you didn't know about when you started?		
Yes	54.8	33.5
No	43.9	66.3
Don't know/refused	1.3	0.2
Q19E. When you first started smoking, did you think more about how smoking would affect your future health or about how you were trying something new and exciting?		
Thought about future health	4.5	21.1
Thought about trying something new and exciting	67.4	58.0
Other	18.1	11.5
Don't know/refused	10.0	9.4
Q19F. When you first started smoking, how long did you think you would continue to smoke?		
A few days	3.9	9.4
A few months	4.5	6.5
Less than a year	3.2	7.7
1-5 years	4.8	10.2
More than 5 years	7.4	4.8
Didn't think about it	75.8	61.3
Don't know/refused	0.3	0.0

about health when they began to smoke, but their most frequent answer was still "not at all." However, now that they smoke, most of these individuals said that they do think about the health effects (Question 19c). A substantial proportion of

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Source: https://www.industrydocuments.ucsf.edu/docs/yjgk0001

TABLE 6.4 Responses to Question "About How Many Times, If Any, Have You Tried to Quit Smoking?" (in percentages)

Number of Times	*Adult Smokers (N = 310)*	*Young Smokers (N = 478)*
0	21.3	38.1
1	16.8	21.8
2-4	38.4	30.1
5-9	11.6	4.0
10+	9.4	4.8
Don't know/refused	2.6	1.3

smokers also said that, since they started smoking, they have heard of health risks they did not know about when they started (Question 19d).

Most telling are the answers to Questions 19e and 19f. Far more beginning smokers were thinking about "trying something new and exciting" than were thinking about health (19e). When asked how long they thought they would continue to smoke when they first started, the majority of young and older smokers said that they did not think about it (19f).

Data from the Annenberg survey indicate that most smokers neither want to continue smoking nor expect to do so. The majority of smokers had made more than one attempt to quit (Table 6.4), and about 65% of the adults and 84% of the young people said that they planned to quit (Table 6.5, Question 29). Of those who planned to quit, about 78% of the adults and 72% of the youth planned to do so within the next year (Table 6.5, Question 29a). When asked whether the researchers would find that they had successfully quit smoking if they were called again in a year (Table 6.5, Question 29b), 78% of the adults and 83% of the young people said yes.

Tables 6.6 and 6.7 present the responses to these same three questions about quitting, conditioned by the number of past attempts to quit (Table 6.6) and by the length of time the individual had been smoking (Table 6.7). In Table 6.6 we see that, except for adults who had never tried to quit, a substantial majority of smokers planned to quit (Question 29) and planned to do so within the next year (Questions 29a and 29b), even though they had unsuccessfully attempted to quit a number of times before. Thus we see that, among youth who had attempted to quit 10 or more times, 91.3% still planned to quit, and 85.7% of those expected to do so in the first year (Question 29a). This estimated 1-year time line was lower (61.1%) when elicited in Question 29b, but it was still far greater than the "no" response (16.7%).

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Source: https://www.industrydocuments.ucsf.edu/docs/yjgk0001

TABLE 6.5 Perspectives on Quitting Smoking (in percentages)

Questions/Responses	*Adult Smokers (N = 310)*	*Young Smokers (N = 478)*
Q29. Do you plan to quit smoking?		
Yes	65.5	83.7
No	30.6	13.2
Don't know/refused	3.9	3.1
Q29A. When are you planning to quit?		
Next 6 months	49.3	57.0
6 months to a year	24.1	19.5
More than a year from now	15.8	18.2
Don't know/refused	10.8	5.2
Q29B. If we called you again in a year, would you guess you would have successfully quit smoking?		
Yes	77.8	83.3
No	11.4	9.8
Don't know/refused	10.7	6.9

Similar optimism about quitting was evident among longtime smokers (Table 6.7). Even among those who had been smoking for more than 5 years, 64% of adults and 80% of young people planned to quit, and most of these individuals planned to do so within the next year. The median age of the adults who had been smoking for more than 5 years was 41, which makes it likely that they had actually been smoking for more than 20 years (more than 5 years was the longest time in the response options presented by the interviewers). It is noteworthy that these older smokers were as optimistic as young smokers about quitting within the next year.

Although we have seen above that most smokers were not thinking about health risks when they first began to smoke, some of those who were may have been reassured by the thought that there is little or no harm to smoking in the short run. I had earlier observed this in a survey of a sample of high school-age smokers (Slovic, 2000a), and the present findings replicate this result. When asked to "imagine someone who starts to smoke a pack of cigarettes a day at age 16," 29.7% of adult smokers and 26.4% of young smokers agreed with the statement "There is usually no risk to the person at all for the first few years." Agreement was lower among nonsmokers (18.8% for adults and 20.6% for youth). When asked, "How long, if ever, do you think it takes for smoking to seriously

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Source: https://www.industrydocuments.ucsf.edu/docs/yjgk0001

TABLE 6.6 Plans to Quit Smoking by Number of Past Attempts to Quit (in percentages)

	Number of Attempts to Quit							
	0		1-4		5-9		10+	
Questions/Responses	*AS*	*YS*	*AS*	*YS*	*AS*	*YS*	*AS*	*YS*
Q29. Do you plan to quit smoking?								
Yes	39.4	74.7	67.8	89.5	88.9	100.0	79.3	91.3
No	54.6	22.0	28.1	7.7	11.1	0.0	20.7	8.7
Don't know	6.1	3.3	4.1	2.8	0.0	0.0	0.0	0.0
Q29A. When are you planning to quit?								
Next 6 months	38.5	56.6	46.6	55.0	62.5	57.9	52.2	76.2
6 months to a year	26.9	15.4	27.6	23.0	18.8	21.0	17.4	9.5
More than a year from now	15.4	23.5	17.2	16.3	15.6	15.8	8.7	9.5
Don't know	19.2	4.4	8.6	5.9	3.1	5.3	21.7	4.8
Q29B. If called in a year, would you have quit?								
Yes	88.2	86.7	81.4	85.0	69.2	66.7	56.2	61.1
No	0.0	7.1	9.3	9.2	19.2	26.7	25.0	16.7
Don't know	11.8	6.1	9.3	5.8	11.5	6.7	18.8	22.2

NOTE: AS = adult smokers; YS = young smokers.

harm the health of a new smoker?" 44.8% of adult smokers and 32.0% of young smokers answered 5 years or more.

Addiction

Loewenstein (1999; Chapter 9, this volume) has proposed a theoretical perspective that portrays addiction as an extreme form of a class of behaviors that are controlled by "visceral factors." Visceral factors include drive states such as hunger, thirst, sexual desire, moods and emotions, physical pain, and, for addiction, intense craving for a drug or cigarette. From the experiential perspective, it is very difficult, if not impossible, to appreciate one's own susceptibility to visceral influences. As Loewenstein observes: "Unlike currently experienced visceral factors, which have a disproportionate impact on behavior, delayed visceral factors tend to be ignored or severely underweighted in decision making. Today's pain, hunger, anger, etc. are palpable, but the same sensations anticipated in the future receive little weight" (p. 240).

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Source: https://www.industrydocuments.ucsf.edu/docs/yjgk0001

TABLE 6.7 Plans to Quit Smoking by Length of Time Smoking (in percentages)

	Length of Time Smoking							
	1 Month or Less		*About 1 Year*		*1-5 Years*		*More Than 5 Years*	
Questions/Responses	*AS*	*YS*	*AS*	*YS*	*AS*	*YS*	*AS*	*YS*
Q29. Do you plan to quit smoking?								
Yes	—	81.4	—	82.5	74.2	87.3	63.7	80.2
No	—	15.2	—	14.3	25.8	11.0	32.2	15.9
Don't know	—	3.4	—	3.2	0.0	1.8	4.1	4.0
Q29A. When are you planning to quit?								
Next 6 months	—	85.4	—	55.8	39.1	51.8	50.0	54.5
6 months to a year	—	6.2	—	28.8	17.4	21.6	25.6	16.8
More than a year from now	—	2.1	—	7.7	17.4	22.1	15.7	23.8
Don't know	—	6.2	—	7.7	26.1	4.5	8.7	5.0
Q29B. If called in a year, would you have quit?								
Yes	—	90.9	—	86.4	92.3	81.5	75.4	80.6
No	—	6.8	—	6.8	7.7	10.3	12.3	12.5
Don't know	—	2.3	—	6.8	0.0	8.2	12.3	6.9

NOTE: AS = adult smokers; YS = young smokers.

The Annenberg survey data provide abundant evidence regarding the difficulties of stopping smoking. First, as shown earlier, in Table 6.4, the majority of the adult and young smokers had attempted to quit, usually more than once. Second, despite their lack of success in quitting, most of these individuals planned to stop smoking in the near future (Tables 6.5, 6.6, and 6.7). Another indication of the short-term perspective of smokers and their misperception of the ease of quitting comes from the finding that only 7.4% of the adult smokers and 4.8% of the young people expected to smoke for more than 5 years when they began (Table 6.3, Question 19f), yet 87.1% of these adults and 26.4% of these youth reported that they had been smoking for more than 5 years.

When asked whether they considered themselves addicted to cigarettes, 76.4% of the adult smokers and 58.8% of the young people said yes (bottom row of Table 6.8). The proportions of adults and young people who considered themselves addicted increased sharply with the number of attempts to quit and length of time smoking (Table 6.8, Questions 30 and 31).

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Source: https://www.industrydocuments.ucsf.edu/docs/yjgk0001

TABLE 6.8 Responses to the Question: "Do you consider yourself addicted to cigarettes?" (in percentages)

	Adult Smokers			*Young Smokers*		
Questions/Responses	*Yes*	*No*	*Don't Know*	*Yes*	*No*	*Don't Know*
Q30. About how many times, if any, have you tried to quit smoking?						
0	59.1	37.9	3.0	41.2	57.7	1.1
1	76.9	23.1	0.0	56.7	43.3	0.0
2-4	78.2	21.0	0.8	75.7	24.3	0.0
5-9	91.7	8.3	0.0	73.7	26.3	0.0
10+	93.1	6.9	0.0	91.3	8.7	0.0
Q31. How long have you smoked?						
Few months or less	—	—	—	3.4	96.6	0.0
About a year	—	—	—	33.3	65.1	1.6
1-5 years	64.5	35.5	0.0	64.5	35.5	0.0
More than 5 years	79.6	19.6	0.7	88.1	11.1	0.8
All respondents	76.4	22.6	1.0	58.8	40.4	0.8

Viscusi's Quantitative Risk Estimates Are Unreliable

Viscusi (1992b) places great weight on the validity of his quantitative questions about smoking risk perceptions. However, there are a number of reasons to be suspicious about the reliability of answers to his questions about the relative frequency of lung cancer among 100 smokers. First, he asked respondents to estimate the risks to 100 smokers, not to themselves. Answers for themselves would likely be lower, as a result of optimism bias (Weinstein, 1998a). Second, Tversky and Koehler (1994) have developed and tested a theoretical model, *support theory*, that shows that respondents asked to judge the likelihood for one focal event (e.g., lung cancer) produce higher probabilities than do respondents asked for judgments of the same event in the context of other alternative events. Third, we would expect that young smokers, as experiential rather than analytic thinkers who do not expect to be smoking much longer, would not be paying careful attention to tracking lung cancer rates among smokers. Hence they would not have firm quantitative estimates in their heads.

The Annenberg survey tested these suspicions by first replicating Viscusi's line of questioning and then adding a variation in the question format along the lines suggested by Tversky and Koehler's theory. Early in the survey, respondents were

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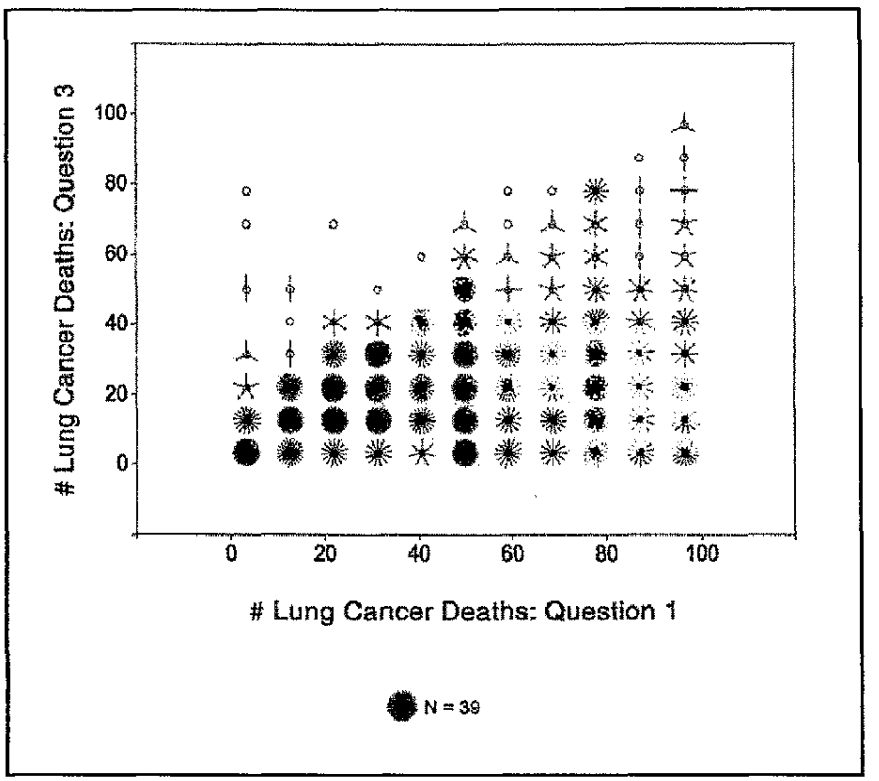

Figure 6.4. Sunflower plot showing the relationship between adult respondents' estimates of lung cancer deaths among 100 smokers. Question 1 asked only about lung cancer. Question 3 asked about lung cancer and other causes of death. Open circles represent 1 respondent. Multiple cases at a point are represented by the number of petals on the sunflower.

asked to "imagine 100 cigarette smokers, both men and women, who smoked cigarettes their entire adult lives. How many of these 100 people do you think will die from lung cancer?" This was immediately followed by a similar question asking about the number of lung cancer deaths among 100 *nonsmokers.* Next, a third question asked for respondents' estimates of the number of deaths among the same 100 smokers from (a) automobile accidents, (b) heart disease, (c) stroke, (d) lung cancer, and (e) all other causes combined (the order of a, b, and c was randomized).

Table 6.9 presents the means and standard deviations of the estimates for lung cancer among the 100 smokers inquired about in the first and third questions. The answers to the first question, about lung cancer alone, were in the range obtained in Viscusi's surveys, with estimates by the youth sample being larger than esti-

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Source: https://www.industrydocuments.ucsf.edu/docs/yjgk0001

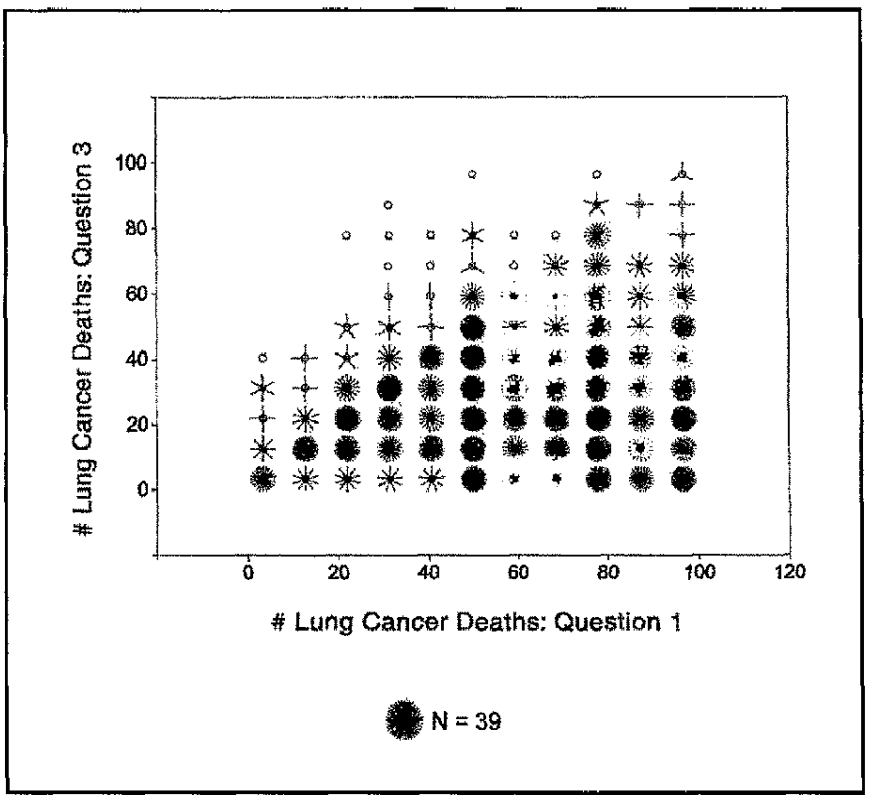

Figure 6.5. Sunflower plot showing the relationship between young respondents' estimates of lung cancer deaths among 100 smokers. Question 1 asked only about lung cancer. Question 3 asked about lung cancer and other causes of death. Open circles represent 1 respondent. Multiple cases at a point are represented by the number of petals on the sunflower.

mates by the adults (60.4 versus 48.5). However, the estimates for lung cancer decreased by more than 50% when made in the context of the other causes (Question 3). The proportions of respondents who reduced their first estimates when given a small number of alternative causes of death in Question 3 were 72.6% (adults) and 80.9% (youth). Furthermore, the correlation between the two estimates, a form of reliability, was very low, only .33 for the adults and .19 for the younger respondents (see the scatterplots in Figures 6.4 and 6.5). These results thus replicate and extend findings obtained earlier with a sample of university students (Slovic, 2000b). They demonstrate that one can get a wide range of estimates for lung cancer (or other smoking-induced causes of death) simply by varying the number of other causes respondents are also asked to judge.

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Source: https://www.industrydocuments.ucsf.edu/docs/yjgk0001

TABLE 6.9 Judged Deaths From Lung Cancer Among 100 Smokers

	Adult Sample (N = 1,416)			*Youth Sample (N = 2,002)*		
	Mean	SD		*Mean*	SD	
Question 1	48.5	27.4		60.4	25.1	
			$r_{13} = .33$			$r_{13} = .19$
Question 3	23.5	17.5		28.3	19.4	
% Q3 < Q1	72.6			80.9		

Quantitative judgments of lung cancer risk were also elicited in other ways in the survey, but these judgments, too, were unreliable. Question 6 in the survey, also given in two forms, asked: "If you smoked a pack of cigarettes a day, how much do you think it would increase your chances of getting lung cancer?"[6] Possible responses were as follows:

Question 6, Format A	*Question 6, Format B*
No more likely	No more likely
Twice as likely	Twice as likely
5 times as likely	3 times as likely
10 to 20 times as likely	5 times as likely
50 times as likely	10 or more times as likely

The results from Question 6 are displayed in Table 6.10. Note that, in both versions, the estimated rates of increase in lung cancer were higher for the young smokers than for the adults. More salient is the fact that the proportion of adult smokers estimating the increase at 10 times or greater was 41.1% under Format A but only 14.6% under Format B. For young smokers, the corresponding figures were 57.1% (A) and 30.9% (B). We thus see that size of the estimated effect of smoking on lung cancer was strongly dependent on response format, much as was found with Questions 1 and 3.

Another quantitative risk response upon which Viscusi (1992b) relies was elicited by this question: "The average life expectancy for a 21-year-old male (female) is 53 (59) years. What do you believe the life expectancy is for the average male (female) smoker?" Here, too, Viscusi's respondents seemed to appreciate or even overestimate the risks. Their mean loss of life expectancy was *11.5* years.

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Source: https://www.industrydocuments.ucsf.edu/docs/yjgk0001

TABLE 6.10 Response Distributions for Question 6: Increases in Lung Cancer (in percentages)

Format A	*Adult Smokers (N = 153)*	*Young Smokers (N = 245)*	*Format B*	*Adult Smokers (N = 157)*	*Young Smokers (N = 233)*
No more likely	9.2	2.9	No more likely	14.6	4.3
Twice as likely	28.1	24.5	Twice as likely	36.9	13.7
5 times as likely	16.3	15.5	3 times as likely	10.8	17.6
10 to 20 times as likely	25.5	35.1	5 times as likely	19.1	31.3
50 times as likely	15.6	22.0	10 or more times as likely	14.6	30.9
Don't know/refused	5.2	0.0	Don't know/refused	3.8	2.2

The Annenberg survey included two versions of a question asking about the extent to which smoking a pack of cigarettes a day "would shorten your life." Possible responses were as follows:

Question 7, Format A	*Question 7, Format B*
Not at all	Not at all
1 year	A few months
5 to 10 years	1 year
15 years	2 to 3 years
20 years or more	5 to 10 years

We see in Table 6.11 that, in both versions, young smokers estimated somewhat greater loss of life expectancy than did adults. More important, however, is the strong influence of response scale format. For adults, 77.0% of the sample estimated a life shortening of 5 years or more under Format A, compared with only 48.1% under Format B. Corresponding figures for young smokers were 82.7% (A) and 52% (B).

The data from nonsmokers (not shown here) reveal a pattern of format effects quite similar to those of smokers in Tables 6.10 and 6.11. Taken together, these results and those in Table 6.9 indicate that the survey respondents, young and old alike, did not have reliable quantitative knowledge about smoking risks. The judgments they provided depended on how the response options were framed. This conclusion is consistent with other theoretical and empirical research demonstrating the dependence of quantitative judgments such as these on the form of

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Source: https://www.industrydocuments.ucsf.edu/docs/yjgk0001

TABLE 6.11 Response Distributions for Question 7: Shortening of Life (in percentages)

Scale Format A	*Adult Smokers (N = 152)*	*Young Smokers (N = 230)*	*Scale Format B*	*Adult Smokers (N = 158)*	*Young Smokers (N = 248)*
Not at all	6.6	1.7	Not at all	9.5	3.2
1 year	9.9	13.0	A few months	6.3	10.1
5 to 10 years	53.3	50.9	1 year	5.7	5.2
15 years	11.2	18.3	2 to 3 years	20.3	26.6
20 years or more	12.5	13.5	5 to 10 years	48.1	52.0
Don't know/refused	6.6	2.6	Don't know/refused	10.1	2.8

the question and response scale (e.g., Slovic, Monahan, & MacGregor, 2000; Tversky & Koehler, 1994). It is also consistent with the view that smokers do not think analytically about the risks they are taking.

The Failure of Rationality

Viscusi (1992b) argues that smokers make informed, rational decisions to smoke. Viscusi has also asserted that the key question pertaining to the failure of the rational model is one in which an individual, asked to go back in time to the moment of decision and repeat the choice, would not make the same choice again. I asked that question in a small survey of smokers at the University of Oregon and in a poll of Oregon residents (Slovic, 2000b). The Annenberg telephone survey asked it as well of all smokers: "If you had it to do over again, would you start smoking?" The results, shown in Table 6.12, are clear. More than 85% of adult smokers and about 80% of young smokers answered no. Moreover, the pattern of responses shown in the table was similar for both young and adult smokers. The more they felt addicted to cigarettes, the more often they had tried to quit, the longer they had been smoking, and the more cigarettes they were smoking per day, the more likely they were to say no.[7]

Recall Viscusi's central question: "At the time when individuals initiate their smoking activity, do they understand the consequences of their actions and make rational decisions?" The data presented here indicate that the answer to this question is no. Most beginning smokers do not appreciate how their future selves will perceive the risks from smoking and value the trade-off between health and the need to smoke.

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Source: https://www.industrydocuments.ucsf.edu/docs/yjgk0001

TABLE 6.12 Smoking: Would You Start Again? (in percentages)

	Adult Smokers (N = 310)		*Young Smokers (N = 478)*	
Questions/Responses	*Yes*	*No*	*Yes*	*No*
Overall	11.9	85.5	17.0	80.1
Q32. Do you consider yourself addicted to cigarettes?				
Yes	11.4	86.9	13.9	84.3
No	14.3	81.4	21.8	74.6
More than average	7.7	90.4	7.1	92.9
Same as average	11.1	85.6	15.3	80.9
Less than average	16.2	83.8	20.4	77.0
Q30. Number of times tried to quit?				
0	27.3	66.7	22.5	73.1
1-4	9.4	88.3	14.5	83.9
5-9	8.3	91.7	10.5	84.2
10+	0.0	100.0	4.4	95.6
Q31. How long have you smoked?				
Few months or less	—	—	22.0	74.6
About 1 year	—	—	20.6	76.2
1-5 years	19.4	80.7	16.7	79.4
More than 5 years	11.1	86.3	13.5	86.5
Q26. Cigarettes smoked per day last 30 days?				
Less than 1	16.1	83.9	25.3	69.5
1-5	10.5	89.5	18.9	77.5
6-10	10.0	88.0	19.4	79.6
11-14	11.1	86.1	13.4	83.6
15-19	15.4	82.0	5.9	91.2
20	10.4	85.1	7.0	93.0
More than 20	11.4	86.4	12.1	87.9

This is a strong repudiation of the model of informed rational choice. It fits well with findings that indicate that smokers give little conscious thought to risk when they begin to smoke. They appear to be lured into the behavior by the prospects of fun and excitement. Most begin to think of risk only after they have started to smoke and have gained what to them is new information about health risks. The increased likelihood of smokers' repudiating their earlier decision exhibited by those who have been smoking for the longest time, those who are currently

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Source: https://www.industrydocuments.ucsf.edu/docs/yjgk0001

smoking the most cigarettes, those who perceive themselves at high risk from smoking, those who have tried most often to quit, and those who acknowledge their addiction, paints a sad portrait of individuals who are unable to control a behavior that they have come to recognize as harmful.

These disturbing findings underscore the distinction that behavioral decision theorists now make between decision utility and experience utility (Kahneman, 1997; Kahneman & Snell, 1992; Loewenstein & Schkade, 1999). This distinction arises from numerous studies of persons who have experienced very good outcomes, such as winning the lottery, or very bad ones, such as becoming paraplegic or testing positive for HIV. Winning the lottery leaves people much less happy than they had expected, and people adjust to being paraplegic or HIV-positive much better than they had expected (Brickman, Coates, & Janoff-Bulman, 1978). In the case of smoking, the discrepancy between decision utility and experience utility underscores the veracity of Loewenstein's visceral account of addiction.

Cigarette Smokers: Rational Actors or Rational Fools?

Rationality is a product not only of the analytic mind but of the experiential mind. As Damasio (1994) observes:

> The strategies of human reason probably did not develop, in either evolution or any single individual, without the guiding force of the mechanisms of biological regulation, of which emotion and feeling are notable expressions. Moreover, even after reasoning strategies become established . . . their effective deployment probably depends, to a considerable extent, on a continued ability to experience feelings. (p. xii)

Ironically, the perception and integration of affective feelings, within the experiential system, is exactly the kind of high-level maximization process postulated by economic theorists since the days of Jeremy Bentham. In this sense, the affect heuristic enables us to be rational actors in many important situations—but not in all situations. It works beautifully when our experience enables us to anticipate accurately how much we will like the consequences of our decisions. It fails miserably when the consequences turn out to be much different in character from what we had anticipated. In such situations, exemplified well by the smoking of cigarettes, the rational actor becomes the rational fool.[8]

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Source: https://www.industrydocuments.ucsf.edu/docs/yjgk0001

∞ Notes

1. This quote comes from a letter to the editor that was published in the *Register Guard* in Eugene, Oregon, on April 12, 2000 (p. 10a).

2. This inverse relationship is found as well when the correlation is computed across individuals judging the same activity. Thus one person may judge nuclear power to be high in risk and low in benefit, whereas another might judge it low in risk and high in benefit.

3. The mean estimate was 43 of 100, compared with an actuarial value that Viscusi (1992b) claims was only 10-15 of 100. Similar overestimation was found in subsequent studies that asked about lung cancer mortality rather than incidence (Viscusi, 1998a)

4. Viscusi (1992b) interprets his findings as follows: "There is substantial evidence that individuals make tradeoffs with respect to smoking risks and other valued attributes. This behavior is consistent with . . . models of rational behavior. . . . it is unlikely that smoking rates greatly exceed what would prevail in a fully informed market context" (p. 144). Other scholars, quoted on the dust jacket of Viscusi's book, appear to buy Viscusi's argument. A blurb from Alan Schwartz of the Yale Law School notes: "This book combines two disciplines, cognitive psychology and the economics of risk, to make an important contribution to the smoking debate. Viscusi shows that persons in all age groups overestimate smoking risks, as theory predicts, and that persons behave rationally respecting the smoking decision given their perception of the facts. After these findings, the smoking decision can justifiably be regulated only in consequence of third party effects, not because consumers make poor health choices." And Robert D. Tollison of George Mason University asserts: "Viscusi's book will provide the intellectual basis and framework for a long overdue reassessment of the role of government in protecting consumers and workers from certain types of risky behavior. It should come as no surprise that the government has once again been overzealous in their protection of consumers and workers from the dangers of smoking by mandating hazard warnings on packages, restricting television advertising and imposing restrictions on where smoking is permitted. Viscusi analyzes the government's actions and offers us some interesting routes out of the swamp of overprotection."

5. A smoker was defined as someone who said he or she had smoked at least one cigarette within the past 30 days.

6. This was not a question used by Viscusi; rather, it was selected as another way to elicit quantitative estimates of the lung cancer risk associated with smoking.

7. The perception that smoking is risky to one's health was also correlated strongly with the "no" response for both young and adult smokers.

8. I have borrowed the notion of the rational fool from Amartya Sen's (1977) penetrating critique of the behavioral foundations of economic theory.

PM3001144121

Source: https://www.industrydocuments.ucsf.edu/docs/yjgk0001

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